RCC1000

Sony Pan/Tilt/Zoom Camera Controller

User Manual

Preface

This controller is designed for Sony pan/tilt/zoom cameras and supports VISCA protocol. It has all the functions of the Sony PTZ camera handheld remote controller and adds a touch sensitive joystick control. In addition to the joystick and keyboard, the controller has an LCD screen for displaying commands and the camera's working status.

Features and functions of joystick controller:

* Supports VISCA protocol
* Can set and call 1-46 presets of Sony PTZ cameras
* Communication modes: RS485, RS422, RS232
* All parameters can be set conveniently through function keys
* Can control up to seven Sony PTZ cameras
* Supports operation password function
* Key-press sound on/off function
* Variable speed joystick control

The contents of this manual may be updated periodically without notification.

Notes:

* The LCD is fragile. Avoid long exposure under strong light.
* The controller should be used withinin the specified temperature and humidity ranges (see chart below).
* Follow the connection method defined in this manual
* Joystick is fragile. Make sure product is packed in original or adequate packaging if transported.

Parameters:

Item	Parameter
Power supply	DC 12V±10%
Working temperature	-10℃~55℃
Working humidity	⩽90% RH
Communication	RS485, RS422, RS232
Baud rate	2400bps, 4800bps, 9600bps, 19200bps
Ports	RS422 and RS232 port
Display	blue LCD screen
Size	420mm(L)*260mm(W)*170mm(H)

Accessories:

name	quantity	unit	note
connecter	1	pc	N/A
DC 12V adapter	1	pc	Input: 100-240vac, 50/60Hz
<user manual>	1	pc	N/A

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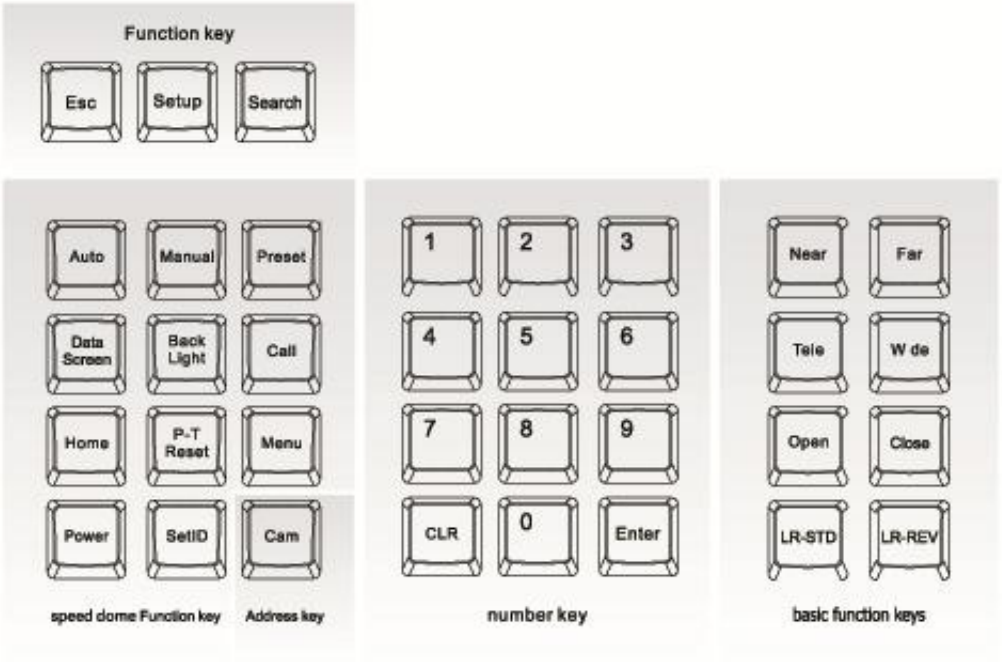
1. Front Panel and Rear Panel

1.1 Keyboard



1.1.1 Keyboard function keys:

[Esc]	Back to previous menu
[Setup]	Press and hold 3s to get into setup menu
[Search]	Display keyboard model number, serial number, key-press sound and operation lock

1.1.2 Sony PTZ camera function setup/recall keys:

[Auto]	Enable auto focus
[Manual]	Enable manual focus

[Data Screen]	Open/close data screen
[Back Light]	Turn on/turn off back light
[Home]	Move camera to home position
[P-T Reset]	Reset the camera
[Power]	Power on/off camera
[SetID]	Camera ID setup
[Preset]	Camera preset setup; used with number key and [Cam] key
[Call]	Recall camera preset; used with number key and [Cam] key
[Menu]	Display camera menu
[Cam]	Select the camera's ID

1.1.3 Number keys:

[CLR]	Delete all information keyed in
[0] - [9]	Number keys: 0,1,2,3,4,5,6,7,8,9
[Enter]	Confirm and save all information keyed in

1.1.4 PTZ camera basic function keys:

[Near]	In manual focus mode, focus near
[Far]	In manual focus mode, focus far
[Tele]	Zoom-in in slow speed, increase magnification (note: to zoom-in faster, use joystick and turn clockwise)
[Wide]	Zoom-out in slow speed, decrease magnification (note: to zoom-out faster, use joystick and turn counter clockwise)
[Open]	In manual aperture mode, enlarge camera aperture
[Close]	In manual aperture mode, reduce camera aperture
[LR-REV]	Reverse direction of controller; camera moves in opposite direction of controller

[LR-STD]	Reset direction of controller to standard; camera moves in same direction as controller

1.2 LCD Screen

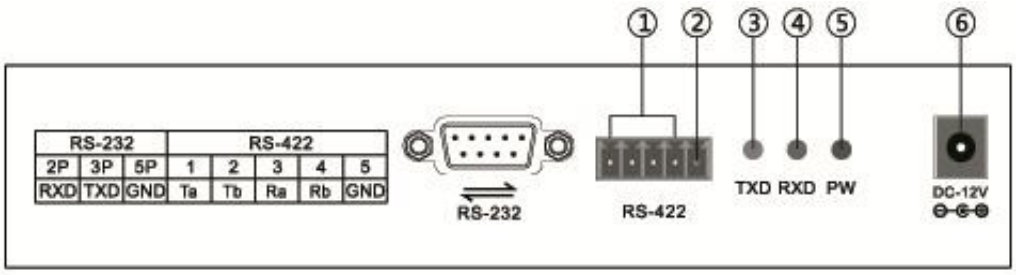
All operations of keys and joystick will display on LCD screen when pressed. LCD screen will go into power saving mode (brightness level is reduced) if there is no user activity for more than 30 seconds.

1.3 Joystick

operation	Output control	operation	Output control	operation	Output control
	up		down		left
operation	Output control	operation	Output control	operation	Output control
	right		Zoom near		Zoom far

1.4 Rear panel

Rear panel: 5 ports for RS422, 1 port for RS232, 1 DC 12V input port, 3 status indicator lights



Rear panel description

item	mark	interface	description
①	RS-422	Control command output port: Connecter 1-4	Connect to RS422 port of video conference camera: Ta to RXD IN-, Tb to RXD IN+ Ra to TXD IN-, Rb to TXD IN+
②	Ground	Control line ground port	Control line ground port
③	TXD	Send command indicator	Flicking and green denote it is sending commands
④	RXD	Receive command indicator	Flicking and green denote it is receiving commands
⑤	PW	Power input indicator	It will be always on and red when keyboard controller is powered on
⑥	DC-12V	Power input port	DC 12V input port

2. Operation

2.1 Single key functions and combined key functions

Single key functions: press key and camera will recall the specified function

Single funtion keys: [Auto] [Data Screen] [Home] [Back Light] [P-T Reset] [Tele] [Wide] [Open] [Close] [LR-STD] [LR-REV] [Joystick]

Combined key functions: press key for more than 2 seconds and camera will recall the specified function

Combined funtion keys: [Manual] [Preset] [Call] [Menu] [Cam] [Power] [SetID] [CLR]

2.2 Combined key functions

Must be in control mode. If LCD screen displays

controller is in control mode. If screen displays other information, press [Esc] to go back to control mode.

2.2.1 Select camera ID:

Press [Cam], enter camera ID number, press [Enter]

For example, to select Camera 2:

Press [Cam], LCD will display:

Press [2], LCD will display:

Press [Enter], LCD will display:

2.3 Camera ID setup:

Sony PTZ camera ID will be set as '1' automatically after powering on.

2.3.1 Camera ID setup for single camera use

Connect camera to controller, press and hold [SetID] for 2 seconds, LCD screen will display

to denote the camera ID has been set as '1'

2.3.2 Camera ID setup for multiple camera use (up to 7)

Connect first camera to controller and subsequent cameras in daisy chain configuration. Press and hold [SetID] for 2 seconds. LCD screen will display

to denote the camera IDs have been set in sequence as '1', '2', '3'...

2.4 Preset setup and recall:

Preset setup: Select camera ID and press [Preset]. LCD will display

Adjust the camera to desired position and zoom, key in a number for this preset and press [Enter]. Repeat steps to setup other presets or press [Esc] to exit.

Preset recall: Select the camera ID and press [Call]. LCD will display

Key in preset number and press [Enter]. Repeat steps to recall other presets or press [Esc] to exit.

2.5 Menu setup:
The following camera functions can be operated by the controller. Refer to your camera manual for a complete list of compatible functions. To access these camera functions, you will be asked to enter the "Camera Menu" password which is "6666".
Note: Move joystick up/down to scroll through menu items and left/right to select item option.

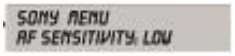
2.5.1 When keyboard controller is in control mode press [Menu]:

1. CAM_DZoomModeInq: LCD screen displays

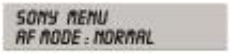
Move joystick left/right to select DZoom ON or DZoom OFF.

2. CAM_DZoomC/SModeInq: LCD screen displays

Move joystick left/right to select Combine Mode or Separate Mode.

3. CAM_AFSensitivityInq: LCD screen displays 

Move joystick left/right to select AF Sensitivity Normal or AF Sensitivity Low.

4. CAM_AFModeInq: LCD screen displays 

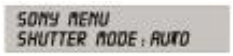
Move joystick left/right to select Normal AF or Interval AF.

5. CAM_WBModeInq: LCD screen displays

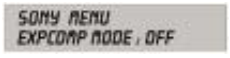
Move joystick left/right to select Auto, In Door, Out Door, One Push WB, ATW or Manual.

6. CAM_AEModeInq: LCD screen displays

Move joystick left/right to select Full Auto, Manual, Shutter Priority, Iris Priority, or Bright.

7. CAM_SlowShutterModeInq: LCD screen displays 

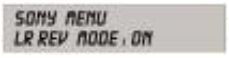
Move joystick left/right to select Auto or Manual.

8. CAM_ExpCompModeInq: LCD screen displays 

Move joystick left/right to select ON or OFF.

9. CAM_SpotAEModeInq: LCD screen displays

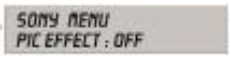
Move joystick left/right to select ON or OFF.

10. CAM_LR_ReverseModeInq: LCD screen displays 

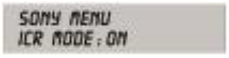
Move joystick left/right to select ON or OFF.

11. CAM_FreezeModeInq: LCD screen displays

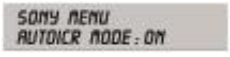
Move joystick left/right to select ON or OFF.

12. CAM_PictureEffectModeInq: LCD screen displays 

Move joystick left/right to select ON or OFF.

13. CAM_ICRModeInq: LCD screen displays 

Move joystick left/right to select ON or OFF.

14. CAM_AutoICRModeInq: LCD screen displays 

Move joystick left/right to select ON or OFF.

Note:

1. The controller will receive answer code from camera when performing above operations. If answer code is not correct, controller LCD screen will display "RE DATA UNKNOWN".

2. When finished making menu selection, LCD screen will display

There are two options for saving a menu setting. Press [Enter] to save current setup until it is modified by user (setting will be saved even if controller is powered off). Press [Esc] to save current setup only until controller is powered off.

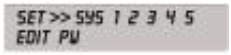
3. System settings

3.1 System settings setup

The controller's system settings include: password, default factory settings, key-press sound on/off, ID, lock.

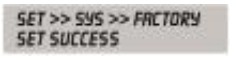
3.1.1 Default factory settings

Press and hold [Setup] for 3 seconds. LCD screen displays

Key in password (default is '8888'), press [Enter]. LCD screen displays 

Move joystick right. LCD screen displays

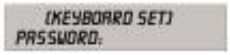
Press [Enter]. LCD screen displays

Press [Enter] again. Buzzer will sound for about 1 second. Setup is finished and LCD screen displays 

Press [Esc] to quit and exit without saving setup.

Press [Esc] two times to return to normal mode.

3.1.2 Keyboard lock on/off setup

Press and hold [Setup] for 3 seconds. LCD screen displays 

Key in password and press [Enter]. LCD screen displays

Move joystick to select item 6. LCD screen displays

Press [Enter] to turn off keyboard lock function. LCD screen displays

Move joystick left/right. LCD screen displays

Press [Enter]. LCD screen displays

Key in 4 digit password. Press [Enter] again. LCD screen displays

Press [Esc] two times to quit and return to normal mode.

3.1.3 Keyboard lock setting

In normal mode, press [Esc]. LCD screen displays

Key in password and press [Enter] to lock controller. LCD screen displays

Press any key. LCD screen displays

Key in password and press [Enter]. Controller will return to unlocked mode.

3.2 Settings framework

>SYSTEM Setup	>SET PASSWORD	OLD PW :	4 digit
		NEW PW :	4 digit
		AGAIN PW :	4 digit
	>LOAD DEFAULT	SURE?	【Enter】to confirm 【Esc】to quit
	LOAD ISP	SURE?	【Enter】to confirm 【Esc】to quit
	SOUND	ON	Move joystick to select, 【Enter】to confirm
		OFF	
	KB ID	ID	Number【0】-【15】
	LOCK SET	ON	Move joystick to select,【Enter】to get into sub-menu
		OFF	

3.3 System settings display

Press [Search] and the following information will display:

System inquiry	MODLE:XXXXXXXXXX	Maximum 10 digit
	SN : XXXXXXXX	8 digit
	KB ID: XXX	2 digit
	LOCK(ON/OFF)	Keyboard lock status(on or off)
	SOUND(ON/OFF)	Key-press sound status(on or off)

4. Camera connection

4.1 Typical camera connection diagram

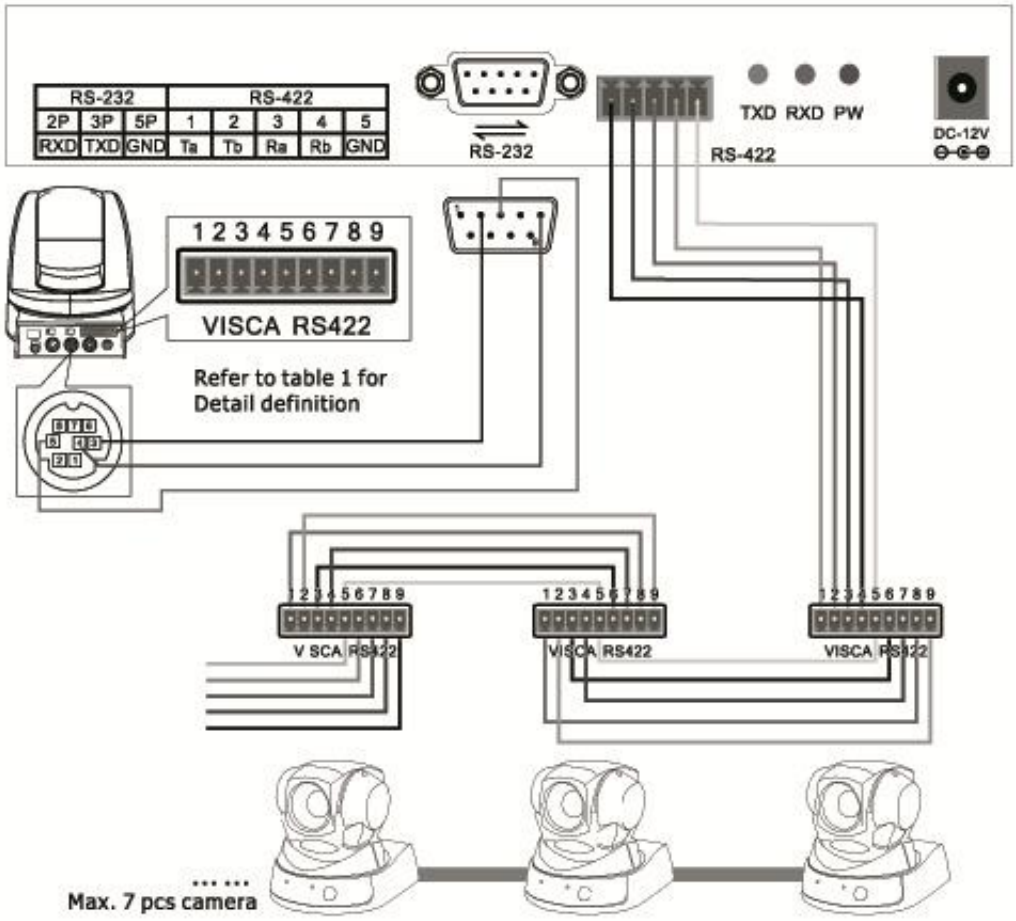


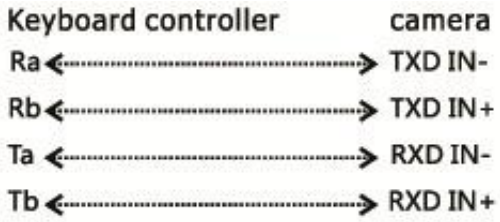
TABLE 1. VISCA RS422 port definition:

Item	1	2	3	4	5	6	7	8	9
definition	TXD IN+	TXD IN-	RXD IN+	RXD IN-	GND	TXD OUT+	TXD OUT-	RXD OUT+	RXD OUT-

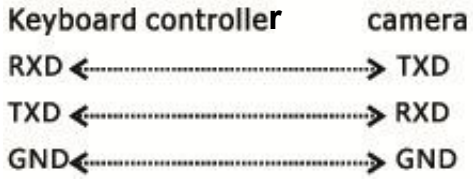
4.2 Camera connection details

4.2.1 Connection between controller and camera

When using the RS422 connection, the 3rd port of the controller (Ra) connects to the 3rd port of the camera (TXD IN-), the 4th port of the controller (Rb) connects to the 4th port of the camera (TXD IN+), the 1st port of the controller (Ta) connects to the 1st port of the camera (RXD IN-) and the 2nd port of the controller (Tb) connects to the 2nd port of the camera (RXD IN+).

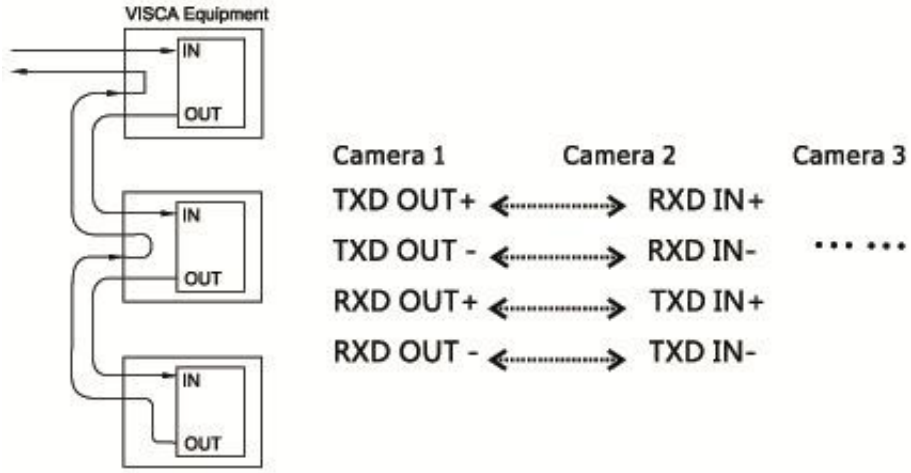


When using the RS232 connection, the 1st connector of the controller (RXD) connects to the 3rd connector of the camera (TXD), the 2nd connector of the controller (TXD) connects to the 5th connector of the camera (RXD), the 3rd connector of the controller (GND) connects to the 4th connector of the camera (GND). Or use a standard RS232 cable (EVI CONTROL CABLE) to connect both devices.



4.2.2 Connection between cameras

When using the RS422 control, the 1st camera's output connects to the 2nd camera's input, the 2nd camera's output connects to the 3rd camera's input, and so on.



When using the RS232 control, the connection method is the same. The 1st camera's output connects to the 2nd camera's input, the 2nd camera's output connects to the 3rd camera's input, and so on. Use RS232 EVI DS-CABLE to connect camera to camera.

5. FAQ

Problem	Reason	Solution
Keyboard can not control the camera	Faulty wiring	Please refer to section 4.2 for correct wiring method
	Faulty setup	Please make sure the baud rate is correct
some cameras can be controlled, but others can not	Faulty wiring	Please refer to section 4.2 for correct wiring method
	Faulty setup	Confirm the camera's setup is correct
All cameras will be controlled together	Faulty wiring	Please refer to section 4.1 for correct wiring method
Forgot the keyboard lock password	reset the password	

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Keyboard controller

006.08.09-32TS